# PART 520 - SOIL AND WATER RESOURCE DEVELOPMENT SUBPART A - EROSION AND SEDIMENT CONTROL

AL520.01(a)

AL520.01(a) Minimizing Erosion and Pollution During Construction

#### **GENERAL**

For all construction sites, whether a project or conservation operation, and regardless of the size of land disturbance, NRCS will include adequate Best Management Practices (BMPs) in the design to minimize erosion and pollution during construction. This may include details and specifications for such items as silt fence, hay bale barrier, temporary vegetation, mulching, etc. Designs should also include construction sequencing (project phasing) that minimizes the amount of area disturbed at any one time.

AL520.01(h) provides a checklist for controlling pollution which gives detailed procedural guides to comply with the policy.

#### **NPDES**

Phase 2 of the National Pollution Discharge Elimination System (NPDES) administered by the Alabama Department of Environmental Management (ADEM) requires that construction sites with one (1) acre or more of planned land disturbance be permitted for storm water discharge.

The following activities are exempt from this NPDES permitting provided the design incorporates the Construction Best Management Practices Plan (CBMPP) components found in Chapter 335-6-12-.21 of the Phase 2 rule:

- Normal silvicultural harvesting and associated construction practices including the
  construction of forest roads and borrow areas used to obtain material to construct and
  maintain forest roads. Borrow areas must be less than 5 acres in size, have effective BMP's
  fully implemented, and be disturbed for less than 60 days. The timber harvesting operation is
  not exempt if the purpose of the harvest is to clear the land for a development that would
  require coverage under this permit, such as a residential or commercial development.
- Animal feeding operation (AFO) or concentrated animal feeding operation (CAFO)
  construction activities that have been granted registration under the AFO/CAFO portion of the
  NPDES program. The CBMPP components must be incorporated into the Waste
  Management System Plan (WMSP) written specifically for the operation.
- Aquatic animal production facilities, concentrated aquatic animal production facilities, and aquaculture project construction activities that have been granted NPDES coverage in accordance with ADEM regulations.
- Normal on-farm, non-AFO agricultural planting, harvesting, and associated normal
  agricultural practices, including ponds constructed for the purpose of irrigation and/or
  livestock water, provided the practices are commensurate with the size of the operation and
  implemented in a manner that meets or exceeds NRCS technical standards and guidelines.

The NPDES permit requires that a CBMPP be prepared by a Qualified Credentialed Professional (QCP) prior to beginning construction activities at the site. Alabama NRCS employees can qualify as a QCP, if designated by the state conservationist, according to ADEM rules.

#### AL520.01(a)

In order to obtain permit coverage an owner/operator must submit a Notice of Registration (NOR), with the appropriate registration fee, to ADEM prior to beginning construction activities. There are two different criteria for submitting the NOR dependent upon the waterbody segment receiving discharges from the site. The criteria are listed below:

- For those sites that discharge into a Tier 1 waterbody segment, discharge to a waterbody
  designated as an Outstanding Natural Resource Water, or where a water of the State is to be
  relocated, diverted or realigned, the NOR and a copy of the CBMPP must be submitted to
  ADEM 30 days before construction begins. A Tier 1 waterbody segment is a stream segment
  that appears on the most recent 303d list due to a pollutant from construction activity.
- For all other sites, the NOR must be submitted before construction begins. The owner does not need to submit the CBMPP on these sites.

The permit also requires that after installation, BMPs at the site be inspected on a regular basis by a Qualified Credentialed Inspector (QCI), QCP, or someone working under the direct supervision of a QCP. BMP inspections are to document the effectiveness of the BMPs and to note any needed maintenance of BMPs on site or to recommend revisions to the BMP plan. When deemed necessary by the inspecting QCP, water quality samples are also required to be taken. Complete and comprehensive inspections are to be conducted:

- A minimum of once a month by a QCI, QCP, or a qualified person under the direct supervision of a QCP;
- A minimum of once every six months by a QCP or a qualified person under the direct supervision of a QCP; and
- After any precipitation of 0.75 inches or more in any 24 hour period since the last inspection.
   This inspection after a precipitation is to commence as promptly as possible, but no later than 48 hours after resuming construction activity. The inspection is to be completed no later than 72 hours following the precipitation event.

The complete NPDES Phase II rule, a list of Tier I waterbodies, a map of Tier 1 waterbodies, and registration and inspection forms can be found at the following web site: www.adem.state.al.us/FieldOps/Permiting/Construction/Construction.htm

#### NRCS ASSISTANCE WITH REGISTRATION, CBMPP PREPARATION, AND INSPECTIONS

For PL83-566, Watershed Structural Measures, NRCS will provide assistance to the sponsor or landowner as appropriate in developing information to submit a NOR to ADEM for sites that require a permit. NRCS will also provide necessary BMP inspections and runoff monitoring requirements for each permitted site that is constructed by NRCS.

For all other activities in which NRCS is providing technical assistance, NRCS will develop a CBMPP and provide related services for only those practices in which a conservation practice standard exists. A CBMPP for animal production facilities will not be prepared by NRCS.

#### **CONSERVATION OPERATIONS**

The resource engineer (RE) is responsible for assisting field office personnel in evaluating, planning, and designing measures to reduce pollution on conservation operation program sites.

#### **PROJECT TYPE ACTIVITIES**

The cost of pollution abatement measures is a construction cost and should be cost-shared accordingly. Consideration will be given during the planning of all structural measures to include actions necessary to minimize pollution from soil erosion during and after construction.

The state design engineer (SDE), with the assistance of the state conservation engineer (SCE) and responsible RE, is responsible for evaluating the pollution hazard for each structural measure and incorporating the necessary pollution control measures into construction contracts. The state office engineering design section (EDS) or RE having responsibility for the design will detail the work necessary to minimize on-site pollution, erosion, and downstream pollution during construction.

During the collection of field data for design, the field engineer will obtain all necessary data to properly plan and design erosion and pollution control measures.

The state resource conservationist (SRC) and specialists from the ecological sciences staff will have the overall responsibility for developing temporary and permanent vegetative plans and specifications. The responsible RE will provide a map showing the location, slope, and approximate size of the disturbed areas to be vegetated. This map will be used to facilitate completion of the vegetative plan prior to completion of the final design. The resource conservation staff will prepare the vegetative plan, and it will be a part of the construction or vegetation contract. Vegetative plans for construction contracts will be included in the engineering review. The SDE will see that the vegetation specifications conform to contract format.

The contracting officer's technical representative (COTR) (project engineer) will request the district conservationist to give technical assistance in application of vegetative treatment measures included in contract work.

#### Part 520 - Soil and Water Resources Development

# PART 520 - SOIL AND WATER RESOURCES DEVELOPMENT SUBPART A - EROSION AND SEDIMENT CONTROL

AL520.01(h)

AL520.01(h) Exhibit 1. Checklist for controlling pollution during construction.

The successful prevention and control of pollution from construction operations depends on (1) the development of a comprehensive control plan, and (2) the application of the plan supplemented with other needed control measures that become apparent during construction. Each of these requires ingenuity on the part of the responsible parties in order for them to visualize the potential pollution problems and to develop practical corrective solutions.

This checklist is intended as a guide, and additional measures should be considered when appropriate for specific site conditions. Principles in the <u>Alabama Handbook for Erosion Control</u>, <u>Sediment Control</u>, and <u>Storm Water Management on Construction Sites and Urban Areas</u> should be used during the design to insure that the plans include adequate BMPs to comply with ADEM requirements. The following are items that need to be considered in meeting the Service's policy to minimize soil erosion and water and air pollution during construction:

- Access roads should be established over the most suitable terrain and protected with temporary or permanent cover. Stream crossings should be constructed, maintained, and removed in a manner to minimize stream pollution.
- 2. Clearing, clearing and grubbing, and borrow operations should be scheduled in order to minimize the extent and the duration of the unprotected area. Disturbed areas should be seeded to permanent vegetation when use of the area is completed. Temporary seeding or mulching of the disturbed area should be considered if the area will not be used for an extended period of time (longer than 13 days). Sediment barriers between the disturbed area and receiving waters should be used in lieu of temporary cover while the disturbed area is being actively used.
- 3. Spoil areas should be designated on the drawings and provisions made for disposal in such a manner that flooding or runoff will not cause pollution from erosion and sedimentation. Sediment barriers such as silt fences or hay bales should be planned for use on the down gradient side of disposal areas to prevent migration of sediment from the spoil area into receiving waters. Temporary or permanent diversions may be used to divert outside runoff around spoil areas.
- 4. Provisions should be made to control dust, fire, and proper disposal of chemicals, petroleum products, sewage, and other refuse, as necessary. This includes the preparation of a Spill Prevention, Control and Countermeasures (SPCC) Plan, if required by the volume of onsite fuel storage.
- 5. Active dam construction in live streams must be kept to the bare minimum. When it is necessary to work in streams, consideration should be given to by-passing the normal flow.
- 6. Sectional embankment construction should be authorized and/or required, where feasible, to facilitate the bypass of stream flow and to expedite completion of the embankment, thereby reducing periods of high erosion potential.
- 7. Maintain embankment surfaces so that runoff does not become concentrated. Where sectional construction is not feasible, maintain a low section in the top of the embankment for emergency overflow at a point selected so that overtopping will cause the least erosion damage and sediment pollution.

#### Subpart A - Erosion and Sediment Control

- 8. Divert the maximum amount possible of up gradient or offsite water around the construction site. If water is collected and diverted, a stable outlet should be provided to prevent additional erosion and sediment pollution.
- 9. Use diversions and berms to control runoff, divert water, and protect vegetative treatment during construction. Install erosion-resistant gutters or waterways to minimize erosion where water is concentrated and conditions do not permit the establishment of vegetation.
- 10. Use sediment basins as needed to retain sediment.
- 11. Topsoil should be salvaged and spread over disturbed areas when possible. When topsoil is to be stockpiled longer than 13 days, a temporary protective cover of vegetation or mulch should be provided for the stockpile.

#### Subpart C – Dams

#### AL520.21(f) Exhibit 1. Alabama NRCS Dams Inventory – AL-ENG-42

#### Subpart C - Dams

#### PART 520 - SOIL AND WATER RESOURCE DEVELOPMENT

#### SUBPART C - DAMS

AL520.21(f) Definition and Classes - Alabama NRCS Dams Inventory

All NRCS assisted dams in Alabama that meet the criteria defined in 520.21(f) are to be inventoried. This may include dams that have been completed during the year, not been inventoried before, modified, and project dams that have a 5-year inspection during the year. Resource engineers are responsible for ensuring that inventory dams completed in their engineering areas of responsibility are properly inventoried each year. Inventories should be completed in March of each year and transmitted to the state conservation engineer before April 30<sup>th</sup>.

Inventories are to be completed on form AL-ENG-42, Alabama NRCS Dams Inventory (Exhibit 1). This form has been designed to correlate with the National Inventory of Dams. The Data Dictionary for NRCS Inventory of Dams (Exhibit 2) can be used to help define the data in the inventory. The national office has modified the Data Dictionary to include Field 64, EAP Year. [See Page AL520-10(13).] The AL-ENG-42 has been updated to reflect this change.

Submit form AL-ENG-42 when the following occurs:

New dam completed during the year - Initial Inventory - submit a complete AL-ENG-42 along with AL-ENG-23 (AL-ENG-23 required for watershed dams only).

Existing dam but never inventoried - Initial Inventory - submit a complete AL-ENG-42.

Modified dam - Update - Submit an AL-ENG-42 with the identifying information at the top of the form, Items 1, 4, 5, and 9, and fill in the fields where the information has changed since the last AL-ENG-42 was submitted.

5-year Inspection - Update - Submit AL-ENG-42 with the identifying information at the top of the form and Items 1, 4, 5, and 9. Field 34, Inspection Date; Field 58, O&M Inspection Current; and Field 59, O&M Completed must also be completed. Also include any other information that has changed since the last AL-ENG-42 was submitted.

Errors in Existing Data – Submit AL-ENG-42 with identifying information at the top of the form, Items 1, 4, 5, and 9, and the corrected fields completed. Submit an AL-ENG-42 at any time to correct an error. Fill in the identifying information at the top of the form and complete only the fields where change(s) need to be made.

## AL520.21(f) Exhibit 1. Alabama NRCS Dams Inventory – AL-ENG-42

### U.S. Department of Agriculture Natural Resources Conservation Service

AL-ENG-42 July 2004

n) (0	ntony Completed by		Data
nve	ntory Completed by:		Date:
Hvdi	gressional District: rologic Unit No.:		-
MLR	RA:		•
(1)	DAM NAME:	(19)	FOUNDATION:
(2)	OTHER NAMES:		Material:(R) Rock
(3)	DAM FORMER NAMES:		(RS) Rock and Soil
(4)	FEDERAL ID:		(S) Soil
(5)	NID ID:		(U) Unlisted/Unknown
(6)	LONGITUDE:		Certainty: (K) Known
(7)	LATITUDE:		(Z) Unlisted/Unknown
(8)	SECTION, TOWNSHIP, RANGE	, ,	PURPOSES: (List in order)
	LOCATION:		(I) Irrigation _ (S) Water Supply
(9)	COUNTY:		(R) Recreation _ (N) Navigation (T) Tailings (H) Hydroelectric
(10)			(T) Tailings _ (H) Hydroelectric (D) Debris Control _ (O) Other
(11)			(F) Fish and Wildlife Pond
(12)	DISTANCE TO NEAREST CITY/TOWN:		(C) Flood Control and Storm Water Mgt. (P) Fire Protection/Stock/or Small Farm Pond
(4 O)	OWNED MAME:		(F) File Flotection/Stock/of Small Famil Fond
	OWNER TYPE:	(21)	YEAR COMPLETED:
(14)	OWNER TYPE:(LI) Public Utility	` ,	(XXXX)
	(F) Federal(U) Public Utility(S) State	(22)	YEAR MODIFIED:
	(L) Local Govt.		(S) Structural (F) Foundation
(15)	DAM DESIGNER:		(M) Mechanical (E) Seismic
(16)	NON-FEDERAL DAM ON FEDERAL	(00)	(H) Hydraulic (O) Other
	PROPERTY: YES NO		DAM LEIGHT:
(17)	DAM TYPE:		DAM HEIGHT:
(18)	CORE:	` '	STRUCTURAL HEIGHT:
	Position: (F) Upstream Facing		HYDRAULIC HEIGHT:
	(H) Homogenous Dam		MAXIMUM DISCHARGE:
	(I) Core	` '	MAXIMUM STORAGE:NORMAL STORAGE:
	(X) Unlisted/Unknown	, ,	
	Type: (A) Bituminous Concrete		SURFACE AREA:
	(C) Concrete	` ,	DRAINAGE AREA:
	(E) Earth	(32)	DOWNSTREAM HAZARD POTENTIAL:
	(M) Metal	(22)	(L) Low (S) Significant (H) High
	(P) Plastic	(33)	EMERGENCY ACTION PLAN:
	(X) Unlisted/Unknown	(2.4)	YESNONR
	Certainty: (K) Known	(34)	INSPECTION DATE:
	(Z) Estimated	(25)	(mm/dd/yyyy)
		(33)	INSPECTION FREQUENCY:

## Part 520 - Soil and Water Resources Development

## AL520.21(f) Exhibit 1. Alabama NRCS Dams Inventory - AL-ENG-42 (Con't

(36)	STATE REGULATED DAM: Yes No	(58) O&M INSPECTION CURRENT: YesNo
(37)	STATE REGULATORY AGENCY:	(59) O&M COMPLETED: YesNo
(38)	SPILLWAY TYPE:	(60) POPULATION AT RISK:
_	(C) Controlled (U) Uncontrolled (N) None	(61) POPULATION AT RISK ACCURACY:
(39)	SPILLWAY WIDTH:	(E) (A)
(40)	OUTLET GATES:	(62) HAZARD CLASSIFICATION AS DESIGNED OR
	(X) None (U) Uncontrolled	MODIFIED:(L)(S)(H)
	(S) Slide (L) Vertical Lift	(63) HAZARD POTENTIAL CLASSIFICATION YEAR:
	(R) Roller(B) Bascule(D) Drum(N) Needle	
	(F) Flap (T) Tainter (radical)	(64) EAP YEAR
	(V) Valve(O) Other controlled	(65) SEDIMENT STORAGE: ac.ft.
(41)	VOLUME OF DAM: cu. yds.	(66) FLOOD STORAGE:ac.ft.
(42)	NUMBER OF LOCKS:	(67) SURCHARGE STORAGE: ac.ft.
(43)	LENGTH OF LOCKS:ft.	(68) OTHER STORAGE: ac.ft.
(44)	LOCK WIDTH:ft.	(69) PRINCIPAL SPILLWAY TYPE:
(45)	FEDERAL AGENCY INVOLVEMENT (FAI)	(CP) Concrete Pipe(PL) Plastic
	FUNDING:	(WS) Welded Steel (OC) Open Pipe
(46)	FAI - DESIGN:	(CB) Concrete Box (OT) Other
(47)	FAI - CONSTRUCTION:	(CM) Corrugated Metal (NO) None
(48)	FAI - REGULATORY:	(70) PRIMARY AUXILIARY SPILLWAY TYPE:
(49)	FAI - INSPECTION:	(VE) Vegetated (EA) Earth (HR) Hard Rock (RK) Rock
(50)	FAI - OPERATION:	(SR) Soft Rock (ST) Structural
(51)	FEDERAL AGENCY OWNER:	(OT) Other (NO) None
(52)	FAI - OTHER:	(71) _ SECONDARY AUXILIARY SPILLWAY TYPE:
(53)	PROGRAM AUTHORIZATION:	<del></del>
	(CO) CO-01 (GP) GPCP	(72) _TERTIARY AUXILIARY SPILLWAY TYPE:
	(WS) PL-566 (RC) RC&D	
	(PT) Pilot (FP) WF-03 (OT) Other	(73) _ CONDUIT HEIGHT: ft.
(54)	, ,	(74) _ CONDUIT WIDTH: ft.
(55)	WATERSHED NAME:	(75) _ NUMBER OF CONDUITS: no.
(56)	PLANNED SERVICE LIFE:	(76) _ COOL WATER RELEASE: Yes No
(57)	O&M INSPECTION RESPONSIBILITY:	
(01)	(OWNER) (NONE)	
	(NRCS) (OTHER)	
	(JOINT)	

DATA DICTIONARY 7/16/04

# DATA DICTIONARY NATURAL RESOURCES CONSERVATION SERVICE INVENTORY OF DAMS (NRCSID)

The data base field information is given as follows:

() official field name (field name used in database) (units, where applicable) (field type, field size) -- field description and/or entry options.

The first series of fields (#1 - #44) comprise the National Inventory of Dams (NID) data fields that are standardized by the U. S. Army Corps of Engineers (USACE) and are reported by all National Inventory of Dams participating agencies.

- (1) DAM NAME (DAM\_NAME) (alphanumeric, 65 var) -- Enter the official name of the dam. Do not abbreviate unless part of the official name. For dams that do not have an official name, use the popular name of dam. Do not insert meaningless information such as "Noname" or "Unknown" which only serve to increase the size of the file.
- (2) OTHER DAM NAMES (OTHER\_NAMES) (alphanumeric, 65 var) -- If there are names other than the official name (i.e., reservoir name) of the dam in common use, enter the names in this space. Separate names using a semi-colon. Leave blank if none.
- (3) DAM FORMER NAMES (FORMER\_NAMES) (alphanumeric, 65 var) -- Enter any previous reservoir or dam name(s), if changed. Separate the names using a semicolon. Leave blank if none.
- (4) STATE OR FEDERAL AGENCY ID (FED\_ID) (alphanumeric, 15 var) -- Enter the Official State or Agency identification number for the dam. The first 2 characters contain the State code. Characters 3 through 10 are assigned by the NRCS State office and must uniquely identify that dam within the State. This field was initially used in the 1983-1984 version of the SCS main frame inventory as the unique identifier. This need for a unique identifier has been replaced by the NID ID (Field #5) which has been assigned to every dam in the National Inventory of Dams (NID). This field may also be the same as Field #5 or left blank.
- (5) NID ID (NID\_ID) (alphanumeric, 7) -- Enter the official NID identification number for the dam. This is a required field and must have an entry to be included in the National Inventory of Dams. This field is used as the unique identifier for each dam in the Nation. This identifier is used to link the NID and NRCS databases with other databases for queries about NRCS dams. It is the same as the Corps of Engineers Identification Number assigned in the original 1981 USACE National Inventory of Dams. Once assigned, this NID ID will never be reused. If a dam is removed or decommissioned, the NID ID number for that dam is retired.

The first two characters are the appropriate two letter State abbreviation, based on the location of the dam. The last five characters will be a unique number for that State. Ranges of numbers have been assigned to each Agency participating in the National Inventory of Dams effort so that assigning Agency can be determined.

For the NRCS compiled inventory, this number likely has already been assigned by the State Dam Safety Agency or another Federal Agency, and NRCS should obtain the NID ID from their State Dam Safety Agency.

DATA DICTIONARY 7/16/04

Only in very rare cases, such as nonparticipating States, will NRCS need to assign a NID ID. In this situation, please contact NRCS NHQ for the range of assigned numbers.

- (6) LONGITUDE (LONG\_DEG) (number, 12 var) -- Longitude at the dam centerline as a single value in decimal degrees to four significant digits (Degrees + Minutes/60 + Seconds/3600). NOTE: Longitude in the US is always a minus number. This is the Xcoordinate for geocoding. (We need to give them the accuracy that we want. For Example: -36.1252)
- (7) LATITUDE (LAT\_DEG) (number, 12 var) -- Latitude at the dam centerline as a single value in decimal degrees to four significant digits (Degrees + Minutes/60 + Seconds/3600). This is the Y-coordinate for geocoding. (We need to give them the accuracy that we want. For Example: 24.2148)
- (8) SECTION, TOWNSHIP, RANGE LOCATION (GEODETIC\_LOC) (alphanumeric, 30 var) -- This is an optional field. States that track Section, Township and Range are requested to enter any information that is understandable and that clearly designates the individual values. For example, S.21, T.3N, R.69W. If the meridian location is needed to locate the dam, include it in the field. For example, S21 T3N R68W of 6PM (Sixth Principal Meridian).
- (9) COUNTY (COUNTY) (alphanumeric, 30 var) -- Name of county (or parish) where dam is located.
- (10) RIVER OR STREAM (STREAM) (alphanumeric, 30 var) -- Name of river or stream on which dam is built. If the stream is unnamed, identify it as a tributary to a named river, e.g., TR-Snake. If the dam is located offstream, enter the name of the river or stream and identify as offstream, e.g., Snake-OS.
- (11) NEAREST CITY/TOWN (NEAREST\_TOWN) (alphanumeric, 30 var) -- Name of nearest downstream city, town, or village that is most likely to be affected by floods resulting from failure of the dam.
- (12) DISTANCE TO NEAREST CITY/TOWN (DIST\_TOWN) (miles) (number, 3 var) -Distance to nearest downstream city, town, or village, to the nearest mile (and tenth if appropriate).
- (13) OWNER NAME (OWNER\_NAME) (alphanumeric, 50 var) -- Name of legal owner of dam.
- (14) OWNER TYPE (OWNER TYPE) (alphanumeric, 1) -- Use the following codes to indicate the type of owner:

F for Federal U for Public Utility S for State P for Private owner L for Local Government

Typically for NRCS, this Field would be L if Field #53 = WS, PT, RC, or FP.

(15) DAM DESIGNER (DAM\_DSGNR) (alphanumeric, 65 var) -- Enter the name of the principal firm(s) or agency accomplishing design of the dam and major appurtenances operating features, and major modifications. List original designer, then modification designers (if applicable). Separate the names using a semi-colon. Typically for NRCS, if the design was prepared by an A&E and NRCS approved the plans, this Field would show the name of the A&E firm, and Field #46 would show NRCS involvement. If the design was prepared by NRCS in-house, this field would show USDA-NRCS

DATA DICTIONARY 7/16/04

(16) NON\_FEDERAL DAM ON FEDERAL PROPERTY (NFDFP) (alphanumeric, 1) -Indication whether the dam is a non-Federal dam on Federal property, such as in National Forests.

Y for Yes N for No

(17) DAM TYPE (DAM\_TYPE) (alphanumeric, 6 var) -- Codes to indicate the type of dam. List in order of importance. Codes are concatenated if the dam is a combination of several types. For example, an entry of CNCB would indicate a concrete buttress dam type.

RE for Earth VA for Arch ER for Rockfill MV for Multi-Arch ST for Stone PG for Gravity CN for Concrete TC for Timber Crib CB for Buttress

MS for Masonry OT for Other

(18) CORE (CORE) (alphanumeric, 3) -- Enter code to indicate position, type of watertight member, and certainty. Typically for NRCS, most dams would be HEK.

Position: F for upstream facing;

H for homogenous dam;

I for core;

X for unlisted/unknown.

Type: A for bituminous concrete;

C for concrete; E for earth; M for metal; P for plastic;

X for unlisted/unknown.

Certainty: K for known;

Z for estimated.

(19) FOUNDATION (FNDN) (alphanumeric, 3) -- Code for the material upon which dam is founded followed by the certainty; do not separate with a comma.

Material: R for rock;

RS for rock and soil:

S for soil:

U for unlisted/unknown.

Certainty: K for known;

Z for estimated.

(20) PURPOSES (PURPOSES) (alphanumeric, 8 var) -- Codes to indicate the purposes for which the reservoir is used: Can use up to four purposes, list in order of importance. Codes are concatenated when multiple codes are used, e.g. ICF for irrigation, flood control, and fish and wildlife.

I for Irrigation N for Navigation S for Water Supply

R for Recreation H for Hydroelectric F for Fish and Wildlife Pond

T for Tailings D for Debris Control O for Other

C for Flood Control and Storm Water Management P for Fire Protection, Stock, or Small Farm Pond

DATA DICTIONARY 7/16/04

(21) YEAR COMPLETED (YR\_COMP) (alphanumeric, 5 var) -- Year in which original main dam structure was completed. The NID allows addition of an "E" to indicate an estimated date. Use four digits (Example: 2002). Entry date is not to be changed when modifications or rehabilitations are done; use Field #22 below.

(22) YEAR MODIFIED (YR\_MOD) (alphanumeric, 60 var) -- Year of major modification or rehabilitation of dam or major control structure is completed. Use four digits (Example: 2002). Major changes are defined as structural, foundation, or mechanical construction activity which significantly restores the project to original condition; changes the project's operation, capacity or structural characteristics (e.g., spillway or seismic modification); or increases the longevity, stability, or safety of the dam. Use the codes to indicate the type of modification; up to ten may be entered, separated by semi-colons.

S for structural F for foundation M for mechanical E for seismic H for hydraulic O for other.

- (23) DAM LENGTH (DAM\_LEN) (feet) (number, 7 var) -- Length of dam defined as length along top of dam. Also includes spillway, power plant, navigation lock, fish pass, etc., where these form part of the length of the dam. If detached from the dam, these structures should not be included.
- (24) DAM HEIGHT (DAM\_HT) (feet) (number, 6 var) -- Height of the dam to nearest foot, defined as the vertical distance between the lowest point along the crest of the dam and the lowest point at the downstream toe which usually occurs in the natural bed of the stream or water course.
- (25) STRUCTURAL HEIGHT (STR\_HT) (feet) (number, 6 var) -- Height of the dam to the nearest foot, defined as the vertical distance from the lowest point of the excavated foundation to the top of the dam
- (26) HYDRAULIC HEIGHT (HYDR\_HT) (feet) (number, 6 var) -- Height of the dam to the nearest foot, defined as the vertical distance between the maximum design water level (freeboard design flood) and the lowest point at the downstream toe. Typically for NRCS, this is the same as Field #24.
- (27) MAXIMUM DISCHARGE (MAX\_DISC) (cfs) (number, 7 var) -- The discharge in cubic feet per second (cfs) that the spillway will discharge when the pool is at the maximum designed water surface elevation.
- (28) MAXIMUM STORAGE (MAX\_STOR) (acre-feet) (number, 10 var) The total storage space in a reservoir below the maximum attainable water surface elevation. Typically for NRCS, this is the sum of #65, #66, #67, and #68.
- (29) NORMAL STORAGE (NORM\_STOR) (acre-feet) (number, 10 var) The total storage space in a reservoir below the normal retention level, excluding any flood or surcharge storage. Typically for NRCS, this is the sum of #65 and #68.
- (30) SURFACE AREA (SURF\_A) (acres) (number, 8 var) -- Surface area of the impoundment at normal pool level to the crest of the lowest ungated outlet.
- (31) DRAINAGE AREA (DA) (square miles) (number, 10 var) -- Drainage area to the nearest hundredth, which is defined as the area that drains to the dam.

DATA DICTIONARY 7/16/04

(32) DOWNSTREAM HAZARD POTENTIAL (CUR\_HAZ) (alphanumeric, 1) -- Code to indicate the most current potential hazard classification as defined in the NEM. Use L for NRCS Class a, S for NRCS Class b, and H for NRCS Class c. Use best and latest available information. Qualify how current the data is in Field #63. Do not use any other Codes since this Field is a critical filter for inclusion in the NID.

L for low S for significant H for high

(33) EMERGENCY ACTION PLAN (EAP) (alphanumeric, 2) -- Code indicating whether or not the dam has an Emergency Action Plan developed by the dam owner.

Y for Yes N for No NR for Not Required by submitting agency

Typically for NRCS, if Field #32 is L or S, this Field is NR.

- (34) INSPECTION DATE (LAST\_INSP\_D) (date, 10 var) -- Date of the most recent inspection of the dam prior to submission of data. Typically for NRCS, this means formal inspection led by a qualified engineer (can be NRCS or non-NRCS) as defined in NRCS National Operation & Maintenance Manual (NO&MM). The date should be entered as mm/dd/yyyy (06/30/1982).
- (35) INSPECTION FREQUENCY (INSP\_FREQ) (number, 1) -- Scheduled frequency interval for periodic inspections, in years. Typically for NRCS, this is the frequency of formal inspections required by the State dam regulatory authority.
- (36) STATE REGULATED DAM (STATE\_REG) (alphanumeric, 1) -- Code to indicate whether the dam is considered "State Regulated" by the National Dam Safety Program Act. A "State Regulated Dam" is defined in the Act as a dam for which the State executes one or more of the following general responsibilities: (a) Inspection; (b) Enforcement; (c) Permitting.

Y for Yes N for No

- (37) STATE REGULATORY AGENCY (STATE\_REG\_AGENCY) (alphanumeric, 30 var) -- Name of the primary state agency with regulatory or approval authority over the dam. Use the same abbreviation or acronym as used in the NID.
- (38) SPILLWAY TYPE (SPWY\_TYPE) (alphanumeric, 1) -- Letter code that describes the type of spillway. This is oriented towards very large dams containing gated overflow spillways.

C for Controlled U for Uncontrolled N for None

Typically for NRCS; if Field #20 includes I, leave this field blank; if Field #70 is NO, use N for this field; if Field #70 is not NO, use U for this field.

(39) SPILLWAY WIDTH (SPWY\_W) (feet) (number, 4) -- The width to the nearest foot, of the spillway that is available for discharge when the reservoir is at its maximum designed water surface elevation. Typically for NRCS, this is the bottom width on an open channel spillway.

DATA DICTIONARY 7/16/04

(40) OUTLET GATES (OUT\_GATES) (alphanumeric, 15 var) -- Use one or more of the following codes to describe the type of spillway and controlled outlet gates, if any.

Use up to five types in decreasing size order, separated by semi-colons, followed by number of gates. Typically for NRCS, if Field #38 is U, this field is U; if Field #38 is N, this field is X.

X for none U for uncontrolled T for tainter (radial)
L for vertical lift R for roller B for bascule
D for drum N for needle F for flap

S for slide V for valve O for other controlled

- (41) VOLUME OF DAM (VOL\_DAM) (cubic yards) (number, 10 var) Total number of cubic yards of materials used in the dam structure. Include portions of the powerhouse, locks, and spillways only if they are an integral part of the dam and are required for structural stability.
- (42) NUMBER OF LOCKS (N\_LOCKS) (number, 1) -- Number of existing navigation locks for the project. Typically for NRCS, this is 0.
- (43) LENGTH OF LOCKS (L\_LOCKS) (feet) (number, 4 var) Length of primary navigation lock to the nearest foot. Typically for NRCS, this field is blank.
- (44) LOCK WIDTH (LOC\_W) (feet) (number, 3 var) -- Width of the primary navigation lock to the nearest foot. Typically for NRCS, this field is blank.

The following eight fields (#45 - #52) comprise additional data fields that are only provided by participating Federal Agencies submitting data to the NID. Typically NRCS should enter data for only NRCS or other USDA Agencies involved with NRCS assisted dams. Use the following codes as applicable for each field:

USDA NRCS (Natural Resources Conservation Service, formerly SCS)

USDA FS (Forest Service)

USDA RHS (Rural Housing Service, formerly part of FmHA)

USDA RUS (Rural Utilities Service, formerly part of FmHA or REA)

USDA FSA (Farm Services Agency, formerly ASCS)

USDA ARS (Agricultural Research Service)

- (45) FEDERAL AGENCY INVOLVEMENT IN FUNDING (FED\_FUND) (alphanumeric, 20 var) Federal Agency involved in funding of the dam. Codes are concatenated if several agencies were involved. Typically for NRCS, this should be USDA NRCS if Field #53 = WS, PT, RC, FP.
- (46) FEDERAL AGENCY INVOLVEMENT IN DESIGN (FED\_DESIGN) (alphanumeric, 20 var) -- Federal Agency involved in the design of the dam. Codes are concatenated if several agencies were involved.
- (47) FEDERAL AGENCY INVOLVEMENT IN CONSTRUCTION (FED\_CONST) (alphanumeric, 20 var) -- Federal Agency involved in construction of the dam. Codes are concatenated if several agencies were involved.
- (48) FEDERAL AGENCY INVOLVEMENT IN REGULATORY (FED\_REG) (Alphanumeric, 20 var) -- Federal Agency involved in regulating the dam. Codes are concatenated if several agencies are involved. Typically for NRCS, this field should be blank.

DATA DICTIONARY 7/16/04

- (49) FEDERAL AGENCY INVOLVEMENT IN INSPECTION (alphanumeric, 20 var) (FED\_INSP) -- Federal Agency involved in inspecting the dam. Codes are concatenated if several agencies are involved. Typically for NRCS, this field should be blank. USDA NRCS involvement means formal inspection by an NRCS engineer as defined in NRCS National Operation & Maintenance Manual (NO&MM).
- (50) FEDERAL AGENCY INVOLVEMENT IN OPERATION (FED\_OP) (alphanumeric, 20 var) -- Federal Agency involved in operating the dam. Codes are concatenated if several agencies were involved. Typically for NRCS, this field should be blank.
- (51) FEDERAL AGENCY OWNER (FED\_OWN) (alphanumeric, 20 var) -- Federal Agency which partly or wholly owns the dam. Codes are concatenated if several agencies were involved. Typically for NRCS, this field should be blank.
- (52) FEDERAL AGENCY INVOLVEMENT OTHER (FED\_OTHER) (alphanumeric, 20 var) -- Federal Agency involved in other aspects of the dam. Codes are concatenated if several agencies were involved. Typically for NRCS, this field should be blank.

The following sixteen fields (#53 - #76) comprise additional data fields that should be provided for NRCS assisted dams.

(53) PROGRAM AUTHORIZATION (AUTH) (alphanumeric, var 2) -- Code for authorization.

CO for CO-01 GP for GPCP OT for Other

WS for PL-566 RC for RC&D PT for PILOT FP for WF-03

Dams authorized under WS, PT, RC, or FP are considered as "project" dams.

- (54) WATERSHED NUMBER (WSHED\_NO) (number, 4) -- Contains the 4-digit watershed number for PL-566 dams. Typically the range is 2001 to 2800 for dams included in watershed plans developed within the state or 2801 to 2999 for dams included in plans developed by an adjoining state.
- (55) WATERSHED NAME (WSHED\_NAME) (alphanumeric, var 40) -- Name of watershed project for PL-566 dams.
- (56) PLANNED SERVICE LIFE (SERV\_LIFE) (alphanumeric, 3 var) Number of years used to amortize the benefits of a project dam and/or determine the volume of sediment storage provided in the sediment pool.
- (57) O&M INSPECTION RESPONSIBILITY (O&M\_INSP\_RES) (alphanumeric, 5 var) Code to indicate the party assigned operation and maintenance inspection responsibility by an O&M Agreement or supplemental legal document for a project dam. Leave blank for non-project dams.

OWNER for owner in Field #13 NRCS for NRCS

JOINT for OWNER & NRCS OTHER for other party

NONE for no existing or non-enforceable O&M Agreement

DATA DICTIONARY 7/16/04

(58) O&M INSPECTION CURRENT (O&M\_IN\_CURR) (alphanumeric, 1) – Code to indicate if an O&M Inspection and written report were completed on a project dam during the current or past calendar year by the responsible party in Field #57. Leave blank for non-project dams.

Y for Yes N for No

(59) O&M COMPLETED (O&M\_COMP) (alphanumeric, 1) – Code to indicate if O&M needs reported in prior O&M Inspection Report(s) for project dams have been completed. Leave blank for non-project dams.

Y for Yes N for No

- (60) POPULATION AT RISK (POP\_RISK) (number, 5 var) -- All those persons that would be exposed to flood waters if they took no action to evacuate. It should be the maximum combination of people reasonably expected in the dam breach inundation zone simultaneously at any time of the day or night, including permanent residents, seasonal transients (campers, recreationists, etc), and daily transients (workers, students, shoppers, commuters, etc). Accuracy of the data should be qualified by Field #61.
- (61) POPULATION AT RISK ACCURACY (POP\_ACC) (alphanumeric, 1) Code indicating if the Population at Risk number in Field #60 is based on a visual estimate or breach inundation map analysis.

E for Estimated visually A for Analyzed with breach inundation map

- (62) HAZARD CLASSIFICATION AS DESIGNED OR MODIFIED (DSGN\_HAZ) (alphanumeric, 1) -- Code to indicate the potential hazard to the downstream area at the time the dam was built or modified. Use L for NRCS Class a, S for NRCS Class b, and H for NRCS Class c. If an existing dam was modified to reflect a change in classification, enter the most recent classification for which the dam was designed and modified. Leave blank for unknown.
- (63) HAZARD POTENTIAL CLASSIFICATION YEAR (HAZ\_CLASS\_YEAR) (number, 4) -- Year of most recent verification of Hazard Potential Classification in Field #32 by qualified NRCS personnel. Use four digits for the year (Example: 2002).
- (64) EAP YEAR (EAP\_YEAR) (number, 4) Year of most recent review and verification of existing or implementation of new Emergency Action Plan in Field #33. Use four digits for the year (Example: 2002).
- (65) SEDIMENT STORAGE (SED\_STOR) (acre-feet) (number, 10 var) -- The planned sediment storage capacity of the reservoir as designed.
- (66) FLOOD STORAGE (FLD\_STOR) (acre-feet) (number, 10 var) The flood storage capacity of the reservoir. Typically, this is the capacity of the reservoir between the elevation of the permanent pool and the crest of the auxiliary (emergency) spillway.
- (67) SURCHARGE STORAGE (SUR\_STOR) (acre-feet) (number, 10 var) The surcharge capacity of the reservoir. Typically, this is the capacity of the reservoir between the elevations of the auxiliary (emergency) spillway crest and the top of dam.
- (68) OTHER STORAGE (OTH\_STOR) (acre-feet) (number, 10 var) The other beneficial capacity of the reservoir.

AL520-10(12)

DATA DICTIONARY 7/16/04

(69) PRINCIPAL SPILLWAY TYPE (PS\_TYPE) (alphanumeric, 2) - Code identifying the type of principal spillway as follows:

CP for Concrete Pipe CM for Corrugated Metal PL for Plastic WS for Welded Steel CB for Concrete Box OT for Other

OC for Open Pipe NO for None

(70) PRIMARY AUXILIARY SPILLWAY TYPE (AS1\_TYPE) (alphanumeric, 2) - Code identifying the spillway type of the first auxiliary (emergency) spillway.

VE for Vegetated RK for Rock ST for Structural EA for Earth OT for Other NO for None

HR for Hard Rock SR for Soft Rock

- (71) SECONDARY AUXILIARY SPILLWAY TYPE (AS2\_TYPE) (alphanumeric, 2) Code identifying the spillway type of the second auxiliary (emergency) spillway. Use the codes under Field #70 above.
- (72) TERTIARY AUXILIARY SPILLWAY TYPE (AS3\_TYPE) (alphanumeric, 2) Code identifying the spillway type of the third auxiliary (emergency) spillway. Use the codes under Field #70 above.
- (73) CONDUIT HEIGHT (COND\_HT) (feet) (number, 4 var) Height for rectangular or diameter for round conduit for the of the largest conduit through the dam to nearest tenth of a foot.
- (74) CONDUIT WIDTH (COND\_W) (feet) (number, 4 var) Width (size) of the largest conduit through the dam to the nearest tenth of a foot. Leave blank if conduit is round.
- (75) NUMBER OF CONDUITS (NO\_COND) (number, 2 var) -- Number of conduits through dam.
- (76) COOL WATER RELEASE (COOL\_WATER) (alphanumeric, 1) Code indicating if a cold water release exists.

Y for Yes N for No

#### Subpart C - Dams

# PART 520 - SOIL AND WATER RESOURCE DEVELOPMENT SUBPART C - DAMS

AL520.22(4)

#### AL520.22 Design Criteria

The following procedures shall be followed by NRCS for the design, construction, repair, or alteration of dams.

- (1) Once NRCS undertakes the design of a dam or impoundment, the district conservationist (DC) shall inform the landowner that any changes to the plans and specifications must be approved by NRCS. If for any reason the design is changed or construction proceeds without NRCS's approval and appropriate corrections are not made, the DC shall notify the landowner of the deviations and state that NRCS is terminating all assistance on the project. As a minimum, this notification shall be documented in the conservation assistance notes.
- (2) When final designs are completed, the NRCS will provide sufficient copies of the plans and specifications to the cooperator. The plans and specifications shall adequately describe the works of improvement and shall include the hazard classification of the dam in accordance with NEM 520.21(e). The plans shall also include, as appropriate, any potential damage downstream that may result from a sudden dam failure, location with respect to highways, roads, and streams; the results of any geologic investigation; cross-sections; profiles; logs of borings; location of borrow areas; drawings of principal and emergency spillways; and other additional details as needed to clearly indicate the extent of the work to be performed. An operation and maintenance plan and vegetation plan shall be included as a part of the final design.
- (3) It is essential that NRCS provide adequate inspection during construction in order to certify that the dam was constructed in accordance with the plans and specifications. Before final designs are prepared, the DC will determine if NRCS can provide adequate construction inspection by someone with appropriate engineering job approval authority. If NRCS can provide adequate construction inspection, further NRCS technical assistance may be committed. If NRCS cannot provide adequate construction inspection, the DC shall notify the landowner of his/her need for private engineering assistance to complete the project. NRCS shall not provide technical assistance on the layout and/or construction of a dam until the cooperator has provided NRCS copies of all required permits (NPDES, 404, etc.)
- (4) Landowners and contractors are to be strongly encouraged to construct the dam in accordance with NRCS plans and specifications. If at any time the plans and specifications are not adhered to, the DC shall notify the landowner verbally to immediately take corrective action. If the deficiencies are not corrected in a timely manner, the DC shall notify the landowner stating the deficiencies and that no further NRCS assistance will be provided on this project until the deficiencies are corrected. As a minimum, this notification shall be documented in the conservation assistance notes. When specifications are not met and the dam has the potential to cause significant off-site damages in the event of partial or complete failure, the DC shall send a written notification to the landowner. The notification shall state the known deficiencies and the need for immediate correction.

#### AL520.22(5)

- (5) During the installation of the dam, construction checks shall be taken and recorded in the survey field notes. Construction checks shall be of such frequency and amount that it can be determined if installation is in conformance with NRCS plans and specifications. As a minimum, the following items shall be checked during construction and properly recorded in the engineering field book.
  - (i) Foundation preparation and cutoff trench.
  - (ii) Principal spillway installation including type of pipe and coating, pipe size and gauge, pipe invert elevations, etc.
  - (iii) Antiseep collar or drainage diaphragm.
  - (iv) Foundation drain installation, if required.
  - (v) Sufficient checks of earthfill placement and compaction to ensure adherence to plans and specifications.
  - (vi) Emergency spillway width, side slopes, control section, inlet and outlet grades.
  - (vii) Top of dam profile and cross-sections.
  - (ix) Assurance that adequate vegetation will be established.
- (6) Construction technical assistance provided to the landowner in the form of verbal instructions shall be documented in writing and filed in the engineering file.
- (7) Any design changes made during construction must be approved by an NRCS employee with appropriate engineering job approval authority before changes are made.
- (8) When the dam is completed, the responsible NRCS employee with appropriate engineering job approval will prepare and sign a construction certification and "as-built" plans.
- (9) Construction check notes, design data, a copy of the "as-built" plans and specifications shall be retained in the field office as a permanent record as long as the dam remains in place.

#### AL520.23 Classification

The resource engineer is responsible for the classification or reclassification of all NRCS dams within his/her assigned counties. The classification of those dams that exceed the engineering approval authority of the resource engineer and all WF-08 dams will be concurred in by the state conservation engineer (SCE). The resource engineer will initiate and complete Form AL-ENG-23, Dam Classification and Reclassification for Alabama, for all WF-08 dams and dams requiring SCE concurrence during planning or designing stage as appropriate.

A copy of the classification form (including reclassification) will be filed in the appropriate field office, team office, SCE office, and design section project site design folder. Each completed AL-ENG-23 classification will be reviewed and concurred by the SCE in accordance with NEM 520.23.

#### AL520.25 Clearing Reservoirs

It is state policy to clear all impoundment reservoirs on Class I through Class VIII dams. The state conservationist may approve deviation, within limitation of state law, from this policy when written justification is received from the sponsors and assistant state conservationist for field operations (ASTC-FO).